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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,811	06/19/2001	Richard W.D. Booth	069804-0187	4376
20277 7590 11/26/2007 MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096			EXAMINER AHN, SAM K	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 11/26/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

09/885,811

Applicant(s)

BOOTH ET AL.

Examiner

Sam K. Ahn

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-7 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see p.5, filed 09/17/07, with respect to 112, second paragraph rejection of claim 2 have been fully considered and are persuasive. The 112, second paragraph rejection of claim 2 has been withdrawn.
2. Applicant's arguments, see p.7, filed 09/17/07, with respect to 103(a) rejection of claim 2 and 3 have been fully considered and are persuasive. The rejection of claims 2 and 3 has been withdrawn.
3. Applicant's arguments, see p.9, filed 09/17/07, with respect to 103(a) rejection of claims 4-7 have been fully considered and are persuasive. The rejection of claims 4-7 has been withdrawn.
4. Applicant's arguments filed 09/17/07 have been fully considered but they are not persuasive. On pages 5-6, applicants quote the claimed limitations of claim 1. On pages 6-7, applicants then explain the configuration of figure 1 of the instant application. At the bottom of page 7, applicants assert that prior art does not teach all of the recited limitations. Particularly on page 8, applicants assert that Wessel fails to teach the bolded recited portions of the independent claim of 1 "using the RF input signal, producing an input measurement signal exhibiting varying phase and a substantially constant envelope". The examiner disagrees. The examiner does not rely on Wessel for the teaching of the argued limitations. As explained in the previous office action and again below, the examiner relies on Khatibzadeh for the teaching of the limitations.

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Khatibzadeh teaches a phase tracking subsystem element 430 in Fig.4 and teaches using the RF input signal (modulated signal 422), producing an input measurement signal exhibiting varying phase and a substantially constant envelope (phase signal 432 wherein one skilled in the art would recognize that phase tracking subsystem provided varying phase of a phase signal 432 and since the modulated signal 422 provided to the phase tracking subsystem is mainly concerned with phase, the amplitude or the envelope of the modulated signal provided is relatively constant amplitude at the output of element 430).

Regarding claim 1, Wessel teaches a method of generating feedback information in IQ (In-phase and Quadrature) form for linearity compensation of a communications transmitter using polar modulation and having a communications signal amplifier having an input signal and producing an output signal (see Fig.4), comprising: using the output signal, producing an output measurement signal (signal 50 in Fig.4); using the input signal, producing an input measurement signal (signal 10); and mixing input measurement signals with output measurement signals representing a phase difference between the input measurement signal and the output measurement signal (phase error signal 84).

However, Wessel does not explicitly teach wherein the phase error signal is represented in in-phase and quadrature components, and wherein the input measurement signal (signal 30) exhibiting varying phase and a substantially constant envelope; shifting one of the output measurement signal and the input

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measurement signal by substantially 90 degrees to produce a quadrature measurement signal.

Khatibzadeh teaches providing an input measurement signal (signal 422 in Fig. 4 provided to elements 430 and 440, thus providing signals exhibiting varying phase and a substantially constant envelope at its respective outputs) shifting one of the output measurement signal and the input measurement signal by substantially 90 degrees to produce a quadrature measurement signal (element 420 wherein one skilled in the art would recognize that the in-phase signals are 90 degrees offset from the quadrature signals), and further suggests wherein the signals in the system are represented in in-phase and quadrature form. Khatibzadeh teaches a phase tracking subsystem element 430 in Fig. 4 and teaches using the RF input signal (modulated signal 422), producing an input measurement signal exhibiting varying phase and a substantially constant envelope (phase signal 432 wherein one skilled in the art would recognize that phase tracking subsystem provided varying phase of a phase signal 432 and since the modulated signal 422 provided to the phase tracking subsystem is mainly concerned with phase, the amplitude or the envelope of the modulated signal provided is relatively constant amplitude at the output of element 430). Khatibzadeh further suggests that by providing the signals in in-phase and quadrature form allows separate tracking of the phase and amplitude at elements 430 and 440 (note c.4, l.42-64). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the teaching of Khatibzadeh in the system of Wessel of representing the signals in in-phase and

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quadrature form in order to allow separate tracking of the phase and amplitude at elements 430 and 440 (note c.4, l.42-64). The recitation in the preamble is not given patentable weight since the recitation recites the intended use of a structure and the body of claim does not depend on the preamble for completeness and the bodily limitations are able to stand alone.

Therefore, prior art teaches the claimed limitations.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wessel et al. US 6,275,685 B1 (Wessel, cited previously) in view of Khatibzadeh et al. US 6,975,686 B1 (Khatibzadeh, cited previously).

Regarding claim 1, Wessel teaches a method of generating feedback information in IQ (In-phase and Quadrature) form for linearity compensation of a communications transmitter using polar modulation and having a communications signal amplifier having an input signal and producing an output signal (see Fig.4), comprising: using the output signal, producing an output measurement signal (signal 50 in Fig.4); using the input signal, producing an input measurement signal (signal 10); and mixing input measurement signals.

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with output measurement signals representing a phase difference between the input measurement signal and the output measurement signal (phase error signal 84).

However, Wessel does not explicitly teach wherein the phase error signal is represented in in-phase and quadrature components, and wherein the input measurement signal (signal 30) exhibiting varying phase and a substantially constant envelope; shifting one of the output measurement signal and the input measurement signal by substantially 90 degrees to produce a quadrature measurement signal.

Khatibzadeh teaches providing an input measurement signal (signal 422 in Fig. 4 provided to elements 430 and 440, thus providing signals exhibiting varying phase and a substantially constant envelope at its respective outputs) shifting one of the output measurement signal and the input measurement signal by substantially 90 degrees to produce a quadrature measurement signal (element 420 wherein one skilled in the art would recognize that the in-phase signals are 90 degrees offset from the quadrature signals), and further suggests wherein the signals in the system are represented in in-phase and quadrature form.

Khatibzadeh teaches a phase tracking subsystem element 430 in Fig. 4 and teaches using the RF input signal (modulated signal 422), producing an input measurement signal exhibiting varying phase and a substantially constant envelope (phase signal 432 wherein one skilled in the art would recognize that phase tracking subsystem provided varying phase of a phase signal 432 and

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since the modulated signal 422 provided to the phase tracking subsystem is mainly concerned with phase, the amplitude or the envelope of the modulated signal provided is relatively constant amplitude at the output of element 430). Khatibzadeh further suggests that by providing the signals in in-phase and quadrature form allows separate tracking of the phase and amplitude at elements 430 and 440 (note c.4, l.42-64). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the teaching of Khatibzadeh in the system of Wessel of representing the signals in in-phase and quadrature form in order to allow separate tracking of the phase and amplitude at elements 430 and 440 (note c.4, l.42-64). The recitation in the preamble is not given patentable weight since the recitation recites the intended use of a structure and the body of claim does not depend on the preamble for completeness and the bodily limitations are able to stand alone.

***Allowable Subject Matter***

6. Claims 2-7 are allowed.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is

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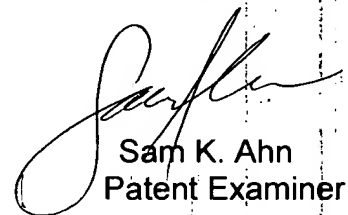
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filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam K. Ahn  
Patent Examiner

11/19/07